

EXHIBIT 19

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TECH

Apple Dominates App Store Search Results, Thwarting Competitors

Searches for 'music,' 'audiobooks' and other categories rank company apps first, a process some developers find unfair; Apple says algorithm doesn't give own products an advantage

By Tripp Mickle

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Apple Inc. [AAPL 0.10%▲](#)'s mobile apps routinely appear first in search results ahead of competitors in its App Store, a powerful advantage that skirts some of the company's rules on such rankings, according to a Wall Street Journal analysis.

The company's apps ranked first in more than 60% of basic searches, such as for "maps," the analysis showed. Apple apps that generate revenue through subscriptions or sales, like Music or Books, showed up first in 95% of searches related to those apps.

This dominance gives the company an upper hand in a marketplace that generates \$50 billion in annual spending. Services revenue linked to the performance of apps is at the center of Apple's strategy to diversify its profits as iPhone sales wane.

While many of Apple's products are undoubtedly popular, they are held to a different standard by the App Store. Apple tells developers that downloads, user reviews and ratings are factors that influence search results. Yet more than two dozen of Apple's apps come preinstalled on iPhones and are shielded from reviews and ratings.

Apple says it doesn't give its own products an advantage over others on the App Store. The company conducted its own tests this month in response to the Journal's questions and some searches yielded different results in which their apps didn't rank first, a spokesman said. The company uses an algorithm that relies on machine learning and past consumer preferences, and the app rankings fluctuate. Apple doesn't disclose details on how it works.

"Apple customers have a very strong connection to our products and many of them use search as a way to find and open their apps," Apple said in a statement. "This customer

usage is the reason Apple has strong rankings in search, and it's the same reason Uber, Microsoft and so many others often have high rankings as well."

Technology companies have long faced regulatory scrutiny over how they use their software platforms to promote their other products or expand the reach of new businesses. Microsoft Corp. and Alphabet Inc. 's Google were penalized by regulators for that reason.

"When you become big and pervasive, the promotion of self-interest runs afoul of antitrust laws," said David Yoffie, a business professor at Harvard University and co-author of the book "The Business of Platforms."

Complaints from rival businesses about self-promotion are helping fuel a backlash against technology giants. The companies are seeking to allay fears in Washington and Europe that tech giants have too quickly concentrated economic power to the detriment of smaller businesses.

On July 16, Apple and three other tech heavyweights were questioned by House Judiciary Committee members during a hearing about the power of online platforms. Politicians from both parties demanded more regulatory scrutiny.



Executives from Facebook Inc., Amazon.com Inc. and Apple Inc., prepare to testify in a July 16 congressional hearing. Tech face regulatory scrutiny in the U.S. and Europe over the increasing market power of their platforms. PHOTO: ANDREW HARRER/BLOOMBERG NEWS

A day later, European Union regulators announced an antitrust probe into Amazon.com Inc. that will examine whether the e-commerce giant is abusing its dual role as a seller of its own products and a marketplace operator.

Legal challenges are mounting over the App Store. The U.S. Supreme Court in May ruled against Apple's attempt to halt a lawsuit claiming consumers are forced to buy apps exclusively from the company. Two app developers are also suing in federal court, alleging the App Store

amounts to a monopoly on distribution. The company previously declined to comment on the lawsuit.

Spotify Technology SA in March filed an antitrust complaint in Europe against Apple, alleging Apple has made it difficult for rival subscription services to market themselves in the App Store, which the company denies.

Apple says it uses 42 factors to determine where apps rank in search but keeps the formula secret to maintain a level playing field for developers and prevent the manipulation of results.

The four factors that most influence the rankings are downloads, ratings, relevance and “user behavior,” according to the company. User behavior, which Apple says is the most important factor, includes the number of times users select an app after a query and also download it, a spokesman said.

Rankings from search results in Apple’s store can make or break an app. The company says searches lead to 65% of all app downloads. There are more than 900 million iPhones world-wide.

Audiobooks.com, an RBmedia company, largely held the No. 1 ranking in “audiobooks” searches in the App Store for nearly two years. Then last September it was unseated by Apple Books. The Apple app had only recently begun marketing audiobooks directly for the first time.

“It was literally overnight,” said Ian Small, Audiobooks.com’s general manager. He said the change triggered a 25% decline in Audiobooks.com’s daily app downloads. The app at the time had 35,000 customer reviews and a 4.8 on the App Store’s 5-star ranking. The preinstalled Apple Books app, with no reviews or ratings, has since ranked No. 1 in searches for “audiobooks.” It also ranks first in searches for “books” and “reader.”

Apple says the No. 1 position for Books in a “books” search is reasonable, since it is an exact name match. The app was also first for “audiobooks” because of “user behavior data” and the inclusion of “audiobooks” as a keyword associated with the app, a spokesman said.

Apple’s role as both the creator of the App Store’s search engine and the beneficiary of its results has rankled developers. They contend Apple is essentially pinning its apps No. 1, compelling anyone seeking alternatives to consider Apple apps first. Such a tactic would help preserve loyalty to Apple’s mobile operating system—a key to future iPhone sales—and encourage the use of revenue-generating apps such as Apple TV and News, developers say.

(Dow Jones & Co., publisher of The Wall Street Journal, has a commercial agreement to supply news through Apple News.)

“It’s definitely unfair,” said Sam Liang, CEO and co-founder of Otter.ai, which developed an app that competes with Apple’s Voice Memos. “People always look at the first one, thinking that’s the best one.”



Sam Liang, who developed Otter Voice Meeting Notes, a recording app with live transcriptions that competes with Apple’s Voice Memos, in Los Altos, Calif. PHOTO: JASON HENRY FOR THE WALL STREET JOURNAL

An Apple spokesman said its search algorithm works the same for all apps, including its own.

Tech giants have amassed millions of loyal users who are potential customers for ancillary businesses. Google has used its leadership in search to sell its Nest thermostats in its online store, and Amazon has capitalized on its e-commerce dominance to market a host of products under its own AmazonBasics brand, such as batteries.

On the iPhone, the App Store typically displays two apps after each search: A paid advertisement followed by the most relevant app to the query. A recent search for “music” offered an Apple Music ad followed by the Apple Music app. To see more, users have to scroll down.

Apple’s apps that generate sales for the company appear more often at No. 1 than its productivity and utility apps, the Journal found in its tests conducted in June. For example, searches for keywords in categories related to the Apple TV app—“videos,” “TV” and “movies”—were led by both Apple TV and the iTunes Store, apps that offer subscriptions and sales of video content.

Competitors such as Amazon Prime Video, with more than one million reviews and near-perfect ratings, ranked just inside the top 10 for “movies.” Netflix Inc.’s iPhone app has an average ranking of 22 over the past year in searches for “movies,” according to App Annie, an analytics firm focused on apps.

Many common searches yielded multiple Apple apps above competitors. A search for “maps”

METHODOLOGY

The WSJ conducted more than 600 searches over two days in mid-June to review where Apple's apps rank in the App Store.

The Journal used at least three keyword searches related to about 40 Apple apps and other apps from competitors. The analysis relied on terms from AppTweak, which suggests keywords to help developers optimize their search results. In the map category, WSJ tested 'maps,' 'directions,' and 'navigation.'

Apple apps that aren't discoverable in the App Store were excluded, such as Camera and Safari. Some apps tied to company operations, such as Apple Support and Apple Events, were also excluded.

The searches took place on six iPhone models in the U.S. using the latest iOS 12.3.1. operating system. Three were personalized and three were unattached to a specific owner. The Journal found minimal variability between phones, except for a few minor differences, such as for apps linked to Apple Watch.

offered Apple's Maps first, followed by two other Apple apps: Find My iPhone and Indoor Survey. The more widely used Google Maps came up fourth with more than two million reviews and a 4.7 rating. It was followed by Google's Waze, which had more than 1 million reviews and a 4.8 rating. Apple's Maps also came up first in searches for "navigation" and "directions."

Indoor Survey, used by businesses to map an indoor space, was the only Apple app of the three with a rating—seven reviews for a 3.9 rating.

A company spokesman said Apple often surfaces apps associated with one developer in bundles. Because this appeared to be disfavoring others, Apple said it is no longer applying this technique to its own apps. The company began phasing out this practice a year ago, a spokesman said.

The Journal conducted at least three basic keyword searches in almost 40 categories to determine which apps show up first. The tests were conducted with six iPhone models using Apple's latest operating system and showed minimal variabilities in rankings.

Apple's apps didn't always show up No. 1 in searches. For example, in a search for "spreadsheet," Google Sheets came up first, while Apple's competitor, Numbers, appeared eighth. Its preinstalled Reminders app didn't show up in the top 10 for searches for "to do list" or "to do."

SHARE YOUR THOUGHTS

How should tech companies handle their own products on platforms they control? Join the discussion below.

In publicly available online guides for developers, Apple emphasizes that “ratings and reviews influence how your app ranks in search results.” One guide titled “Optimizing for App Store Search” on Apple’s website states the company is “constantly evolving” how search works in the App Store.

Yet Apple doesn’t include reviews and ratings for the apps that are automatically downloaded with its operating system. It recently began allowing users to delete some of those preinstalled apps. To give users a chance to recover apps they may have deleted, the company added them to the App Store.

A spokesman said preinstalled apps don’t need to be rated because they’re already integrated into the iPhone. Some apps, such as Books, previously were not built into the mobile operating system. After that changed, Apple removed ratings for those apps, a spokesman said.

In a few cases, Apple apps were previously rated poorly. Apple Books previously enabled reviews and had a 2.7-star rating before Apple eliminated the reviews, according to Sensor Tower, an app-industry research and marketing firm.

Another Apple app, Podcasts, previously averaged a 1.7-star rating before reviews were eliminated, according to Sensor Tower. It appears No. 1 in a search for “podcasts.”

Phillip Shoemaker, who led the App Store review process until 2016, said Apple executives were aware of Podcasts’ poor ratings. Around 2015, his team proposed to senior executives that it purge all apps rated lower than two stars to ensure overall quality.

“That would kill our Podcasts app,” an Apple executive said, according to Mr. Shoemaker, who has advised some independent apps on the App Store review process since leaving Apple. The proposal was eventually rejected, Mr. Shoemaker said.

An Apple spokesman said Apple executives don’t recall Mr. Shoemaker’s comments.

Apple says most searches in the App Store are for exact app titles and that it is built to produce those results.

But some searches for the app titles of competitors served up Apple’s apps first. A search for “the podcast app” in the Journal’s tests surfaced Apple’s Podcasts, Find My Friends and Apple

Books rather than a popular alternative called The Podcast App. That app appeared at No. 4 with over 88,000 reviews and a 4.8 rating.

Apple says its search for “the podcast app” ranked its own Podcasts No. 1 due to “user behavior data” in the U.S. In the U.K., The Podcast App ranks No. 1, a spokesman said.

Apple has long argued that it doesn’t have a monopoly in apps or other products. It has a 14% share of the global smartphone market and a 35% share of the U.S. market, according to Strategy Analytics. Its App Store controls 100% of the apps downloaded on more than 900 million iPhones around the world and 100 million iPhones in the U.S. That makes it different from Google’s Android, the other major mobile operating system, which allows people to download apps without going through its store.

Apple’s 30% cut of most digital sales on the App Store last year generated an estimated \$14 billion in revenue for the company. It added more than \$1 billion in digital-advertising revenue from ads it sells against search terms in the store, according to people familiar with the business. The search ad business began in 2016.

The only way for competitors to be visible above Apple apps in some searches is to pay for the advertising space that precedes the top result in the rankings.



Otter.ai CEO Sam Liang showing off the machine-learning capabilities of his voice recording app on Friday, July 19, 2019. PHOTO: JASON HENRY FOR THE WALL STREET JOURNAL

Nearly a year and a half after launching the voice-recording app Otter, Mr. Liang’s service to capture and share conversations has earned more than 2,000 5-star reviews and been named Apple’s App of the Day but hasn’t cracked the top 50 in searches for “voice recorder,” according to App Annie.

Otter has paid Apple tens of thousands of dollars to advertise its app on searches for “voice memos” and “voice recorder,” said Mr. Liang. The marketing expense helps the transcription

app surface before Apple's Voice Memos but also means the company has less money to hire artificial-intelligence experts to improve the product.

"I hope at the end of the day the best product wins because of accuracy, because of innovation," Mr. Liang said. "We want to invest more on that aspect, however, instead of hiring another two AI Ph.D.s, we have to use that money to just get ranked higher."

—*Abigail Summerville contributed to this article.*

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